

Schools and Web 2.0: a critical perspective

NEIL SELWYN Y ANASTASIA GOUSETI

London Knowledge Lab

Instituto de la Educación

Universidad de Londres, Reino Unido

Resumen:

Este artículo ofrece una visión general de las implicaciones educativas de las tecnologías web 2.0 en las escuelas, sosteniendo que las representaciones actuales del uso de web 2.0 duplican una vieja tendencia en la educación de reacciones exageradas e ideológicamente lanzadas hacia la tecnología. El artículo concluye argumentando a favor de la necesidad de retener una perspectiva prudente, que no crítica, de las escuelas y web 2.0, buscando encontrar maneras de usar las tecnologías web 2.0 para trabajar *con* las escuelas, más que trabajar *contra* ellas.

Palabras clave:

Escuelas, web 2.0, internet, ideología.

Abstract:

This article offers an overview of the educational implications of web 2.0 technologies for schools – arguing that current portrayals of web 2.0 use replicate a long-standing tendency in education for exaggerated and ideologically driven reactions to technology. The article concludes by arguing for the need to retain a cautious, if not critical, perspective on schools and web 2.0 – seeking to find ways of using web 2.0 technologies to work *with* schools, rather than *against* them.

Keywords:

Schools, web 2.0, internet, ideology.

Résumé:

Cet article offre un aperçu des implications pédagogiques des technologies 'web 2.0' pour le système scolaire. La thèse principale est que la manière dont est représenté l'efficacité pédagogique du web 2.0 perpétue une tendance idéologique à exagérer les vertus de la technologie. En conclusion, l'article insiste sur la nécessité de conserver une perspective prudente, sinon critique, sur le web 2.0 and sa valeur pédagogique, afin de pouvoir travailler avec l'école, plutôt que contre elle.

Mots clés:

École, web 2.0, internet, idéologie .

Fecha de recepción: 4-8-09.

Fecha de aceptación. 7-10-09.

Introduction

The future of schools and schooling constitutes one of the major areas of current education debate – especially in light of the increasing importance of digital technologies in contemporary society. Whilst having undoubted educational potential, digital technologies mark a significant area of uncertainty as schools progress into the second decade of the twenty-first century. These uncertainties are encapsulated in current debates over the place of so-called ‘web 2.0’ technologies in education. This article offers an overview of the educational implications of web 2.0 technologies for schools – arguing that current portrayals of web 2.0 use replicate a long-standing tendency in education for exaggerated and ideologically driven reactions to technology. The article concludes by arguing for the need to retain a cautious, if not critical, perspective on schools and web 2.0 – seeking to find ways of using web 2.0 technologies to work *with* schools, rather than *against* them.

What is web 2.0 and why is it important?

Alongside other tags such as the ‘social web’, ‘modern web’ and ‘social software’, the notion of ‘web 2.0’ provides a convenient portmanteau term for a host of recent internet tools and practices ranging from social networking and blogging to ‘folksonomies’ and ‘mash-ups’. Whilst many computer scientists dispute the technical necessity of such rebranding of the internet, these labels reflect the changing nature of contemporary online activity – in particular what is described as a ‘mass socialization’ of internet connectivity based around the collective actions of online user communities rather than individual users (see O’Reilly 2005, Shirky 2008, Brusilovsky 2008). Thus in contrast to the ‘broadcast’ mode of information exchange that characterized internet use in the 1990s, the web applications of the 2000s are seen to rely on openly shared digital content that is authored, critiqued and re-configured by a mass of users - what has been described as ‘many-to-many’ connectivity as opposed to ‘one-to-many’ transmission. Put simply, the current prominence of ‘web 2.0’ within popular and academic discussion of the internet reflects the growing importance that is being placed on interaction between and within groups of internet users.

This privileging of participatory and collaborative group activity has clear parallels with contemporary understandings of learning and education, and it is perhaps unsurprising that web 2.0 has prompted great enthusiasm of late amongst educators and educationalists (see Davies and Merchant 2009). In particular, it has been argued that web 2.0 practices have a strong affinity with socio-cultural accounts of 'authentic' learning where knowledge is constructed actively by learners with the support of communal social settings. A great deal of attention has been paid to the personalised and socially situated forms of learning (intended or otherwise) that can be found within web 2.0 practices, with learners said to gain from participatory experiences in the co-construction of online knowledge (e.g. Lamas *et al.* 2009). Thus, web 2.0 has now come to embody the long-held belief amongst education technologists that learning best takes place within technology-supported networks of learners involved in the creation as well as consumption of content. For these reasons alone, web 2.0 is now being touted in some quarters as "the future of education" (Hargadon 2008).

As this last sentiment illustrates, growing numbers of educational commentators are promoting the educational potential of web 2.0 technologies in defiantly transformatory terms. Aside from the cognitive and pedagogical benefits of social web use, it is now being argued widely that web 2.0 tools offer schools an opportunity to (re)connect with otherwise disaffected and disengaged learners. For example, as Mason and Rennie (2007, p.199) reason, "shared community spaces and inter-group communications are a massive part of what excites young people and therefore should contribute to [their] persistence and motivation to learn". These expectations of enhanced motivation and interest are often accompanied by presumptions of an enhanced equality of opportunity, with much popular and academic commentary celebrating (at least implicitly) the capacity of web 2.0 practices to recast the social arrangements and relations of school-based learning along open and democratic lines. As Solomon and Schrum (2007, p.8) conclude, "everyone can participate thanks to social networking and collaborative tools and the abundance of web 2.0 sites ... The web is no longer a one-way street where someone controls the content. Anyone can control content in a web 2.0 world".

The realities of web 2.0 use in schools

Whilst much hope and excitement surrounds the educational potentials of web 2.0 tools and applications, many education technologists remain profoundly frustrated by the apparent lack of effective web 2.0 use in schools. In particular, a consistent picture is emerging from the empirical literature of a noticeable disjuncture between the rhetoric of mass socialisation and active community-led learning and the rather more individualised and passive realities of web 2.0 use in schools. Concerns are therefore beginning to be raised that web 2.0 technologies do not appear to be used to their full potential even in relatively well-resourced, 'high-technology' classrooms.

This 'digital disconnect' between the rhetoric and reality of web 2.0 use in schools was demonstrated in a recent UK study that deliberately targeted schools that were known to make extensive use of web 2.0 technologies in their teaching and learning (Luckin et al. 2009). These researchers found most students to be making some use of web 2.0 technologies, with the most prominent activities in the classroom being social networking sites, weblogs, wikis, discussion forums and online chat and uploading and downloading of online material. Whilst the study was able to identify some examples of engaging and educationally worthwhile web 2.0 approaches, a range of impediments to effective use were identified. For example, the study found that teachers were generally cautious in adopting collaborative and communal web 2.0 practices that many felt could challenge traditional school structures. More importantly, a number of practical barriers relating to technological access, infrastructure and bandwidth continued to impede web 2.0 use even in the more well-resourced schools. The study also underlined that the educational use of web 2.0 tools largely depended on the rigidity or flexibility of the school curriculum. Additionally, teacher fears related to internet safety and school policy constraints such as school internet restrictions and firewalls, were reported to often impose barriers for the adoption of web 2.0 practices. The study also drew attention to the fact that 'learners spend, on average, more time working on school work on a computer outside school than at school itself' (Luckin et al, 2009).

Whilst institutional factors undoubtedly influence the varying *levels* of web 2.0 in schools, Luckin's study was also significant in highlighting the rather narrow *nature* of web 2.0 use in school. The study reported that for

most students web 2.0 applications appeared to be used to engage with learning content and other learners in a number of bounded and passive ways, rather than supporting unconstrained active interaction with information and knowledge. As Luckin *et al.* (2009) concluded, even in schools with high levels of web 2.0 use in the classroom there was “little evidence of critical enquiry or analytical awareness, few examples of collaborative knowledge construction, and little publication or publishing outside of social networking sites”. At best, many students’ engagement can be said to lead to what Crook (2008) terms a ‘low bandwidth exchange’ of information and knowledge, with any potential for socially-situated authentic learning realised more accurately in terms of co-operation rather than collaboration between individuals. This, of course, contradicts the rhetoric of ‘the web 2.0 ethos of establishing and sustaining collaborative learning communities’ (Crook and Harrison, 2008, p.19).

Whilst the Luckin study used a largely quantitative approach to mapping web 2.0 use across twenty-seven different schools the unsatisfactory use of web 2.0 tools in school settings is also reflected in the emerging qualitative research literature on the nature of students’ use of these tools in the classroom. Again, these in-depth observational studies also suggest that web 2.0 practices do not translate easily into many classroom contexts. For instance, recent qualitative studies have illustrated how fostering a spirit of ‘commons-based peer production’ within a community of web 2.0 users is especially difficult in formal education settings. Grant’s (2009) case study approach to the use of wiki technologies by thirteen and fourteen year-old science and technology students offers some revealing insights into the clash between the communitarian ideals of many education technology designers, and the rather more ‘closed’ approaches towards technology-based learning which are fostered in learners from what Grant (2009) terms their “experience of the broader economy of education and school practices”. Similarly, Lund and Smørdal (2005) study of collaborative wiki construction in Norwegian secondary schools showed how learners preferred to create new entries indefinitely at the expense of editing and improving their own or their classmates’ contributions. Students were observed to “not immediately embrace any notion of collective ownership or epistemology but continued a practice where the institutionally cultivated individual ownership persisted” (Lund and Smørdal, 2005, p.41).

These findings are replicated in other studies of different web 2.0 tools.

For example, Knobel and Lankshear's (2006, p.88) study of blogs used in the classroom revealed a lack of creativity and idea development in terms of the students' writing process, coupled with a subsequent lack of supportive feedback and commentary for other members of the group. The overall conclusion drawn from the study was what the authors termed as a 'why bother' attitude amongst students and teachers alike. These reactions are, perhaps, unsurprising as learners' participation in school-based learning activities (by their very nature) are coerced rather than chosen. Thus, as Kate Orton-Johnson reasons, the communicative and communal activities most readily associated with web 2.0 technologies are often, in effect, only 'secondary activities' which contribute little to the 'real' practices of academic study which remain "grounded in traditional offline activities; reading, note taking and the production of assessed work" (Orton-Johnson 2007, para 11.2).

Popular solutions for overcoming the 'problem' of schools in a web 2.0 world

It is clear that as they currently stand, web 2.0 technologies do not 'fit' easily with schools, increasing numbers of educationalists have therefore started to search for reasons that may underpin the apparent 'failure' of web 2.0 technologies in schools. As is often the case with debates over the 'shortcomings' of public education, 'blame' has tended to be most readily attributed to the perceived deficiencies of educational institutions and practitioners. In particular, the last five years have seen a consensus forming amongst educational technologists that the structure of contemporary schools and schooling is responsible primarily for 'emasculating' the potential of web 2.0 technology (Somekh 2007). In particular, schools' continued reliance on broadcast pedagogies of various kinds, structured hierarchical relationships and formal systems of regulation is seen to leave them 'poorly placed to deal well' with the challenges posed by web 2.0 technologies (Bigum and Rowan 2008, p.250). As Luke (2003, p.398) concludes, twenty-first century educators are failing increasingly to "come to terms with the contradictions" between the complexities and fluidities of web 2.0 based learning and the persistence of a model of schooling "based on static print/book culture and competitive individualism where learning is geographically tied to a desk ... and old-style transmission and surveillance pedagogy".

In fact, many practice-based reasons are beginning to be put forward for the poor showing of web 2.0 in schools. For instance, school buildings are criticised as being architecturally unsuitable for widespread networked and wireless technology use. Teachers are criticised as being too old, incompetent or disinterested to integrate web 2.0 applications into their teaching. Students are said to lack the skills or application to make the most of educational (rather than leisure) applications of web 2.0 applications and tools. School leaders and administrators criticised as lacking the required direction or foresight to adopt collective and communal approaches into their school organisation and management. School curricula are criticised as remaining too rigid and entrenched in top-down paradigms of information transfer. All told, the emerging received wisdom amongst many educationalists and technologists is that schools and those within them lack what it takes “to go with the technological flow” (Dale *et al.* 2004).

All of these factors therefore underpin a growing sense in the minds of many proponents of web 2.0 use in education that schools are simply unable to deal with the challenges posed by web 2.0 technologies for a number of intractable structural reasons. As the sociologist Manuel Castells was led to conclude recently, “education is the most conservative system as to changing anything since the Middle Ages [...] the rules, the format, the organisation of the schools are completely different in terms of interactivity and hypertextuality” (Castells 2008, n.p). With these thoughts in mind, much of the current debate concerning web 2.0 and schools is now beginning to focus on how best to re-structure the school to fit with the demands and needs of the technology use. These solutions for change tend to take one of two forms – either the complete replacement of the school through web 2.0 technologies and practices, or else the reinvention of the school through the use of web 2.0 tools and practices.

i) Replacing the school with web 2.0 technologies

In the minds of some commentators the seriousness of the ‘school problem’ leaves them with no choice but to renounce the school as a viable site for learning. Growing number of educationalists are concluding that the school is a ‘dead’ site for technology use and will never be able to adapt sufficiently to the challenge and disruption of the emerging forms

of web 2.0 (and even web 3.0) technologies. In this sense the school is conceived as an outmoded technology from a past industrial age that should be dismantled. The education technology academic literature, at least, is increasingly featuring the promotion of reasoned arguments that all of the structural impediments and challenges to technology (i.e. the school) must be removed in order to facilitate the realisation of the digital transformation of education.

Indeed, powerful arguments have long been advanced that children are better off learning amongst themselves through web 2.0 and other internet technologies – gaining an education through the ‘hard fun’ of creating and playing in online environments rather than being subjected to the ‘teaching disabled’ pedagogies of the conventional classroom (Negroponte 1995, Shaffer 2008). Now web 2.0 technologies are seen to provide a ready basis for young people’s circumvention of the traditional structures of their schools and generally “finding something online that schools are not providing them” as Henry Jenkins (2004, n.p) has put it. For example, web 2.0 tools such as wikis, social networking and folksonomy software are seen to be able to change education away from being ‘a special activity that takes place in special places at special times, in which children are instructed in subjects for reasons they little understand’ (Leadbeater 2008a, p.149). As Nicole Johnson concluded from her study of ‘expert’ web 2.0 users in Australian secondary schools, home-based web 2.0 technologies are allowing students to learn *despite* (rather than because) their schools:

“The [students] were able to choose what they learned and when they learned. They viewed the medium in which they did it as a form of leisure. They were also able to choose who and what they learned from – not just what has been set up as exclusive and privileged. They were able to both learn and receive pleasure from their engagement and not have to be concerned about the hierarchisation and failure in relation to how traditional schooling determines competence. They were in fact designing and engaging in their own learning. The teenage experts did not gain a significant amount of learning in the area of computing from formal education and traditional schooling [...] what is significant is that these participants accomplished (in their own eyes) a level of expertise that schooling had not been chiefly responsible for. Indeed, all of the participants alleged that schooling had had little influence in their trajectory toward expertise” (Johnson 2009, p.70).

As Johnson infers, web 2.0 tools are seen as having the capacity to make learning a 'looser' arrangement for the individual student - involving a variety of people and places throughout a community for a variety of reasons. In this respect, much faith continues to be vested in twenty-first century web 2.0 technologies as a catalyst for the total substitution of twentieth century modes of teaching, learning and schooling.

There is a distinct ground swell of support within the education technology community for non-school based technology enhanced learning. From James Gee's continual celebration of the learning potential of computer games through to Futurelab's 'out-space' agenda, some influential elements of the education technology community appear keen to hasten the decline of the school as the primary site of learning. Indeed a spirit of using digital technologies to bypass traditional education institutions is evident in online services such as the *School of Everything* – a popular web space in the UK designed to put teachers in contact with learners and therefore aiming to be "an eBay for stuff that does not get taught in school" (Leadbeater 2008b). Similarly, *NotSchool.Net* is a well established and officially endorsed online platform which aims to re-engage UK teenagers otherwise excluded from the formal education system with learning and the pursuit of qualifications. Yet rather than being cursory additions to traditional schooling, these examples and others like them are seen to mark the first steps in a radical rethinking and reorganisation of existing structures and organisation of education provision. As Leadbeater (2008b, p.26) reasons, the imperative of web 2.0 based education provision

"... require[s] us to see learning as something more like a computer game, something that is done peer-to-peer, without a traditional teacher ... We are just at the start of exploring how we can be organised without the hierarchy of top-down organisations. There will be many false turns and failures. But there is also huge potential to create new stores of knowledge to the benefit of all, innovate more effectively, strengthen democracy and give more people the opportunity to make the most of their creativity".

ii) Reinventing the school through web 2.0 technologies

Whilst these 'replacement discourses' are growing in popularity, support remains amongst many educationalists and some technologies for the

use of web 2.0 tools as a means to re-configure and re-invent the school – retaining the overall notion of the school as an institution, but along more fluid and flexible lines of ‘school 2.0’ (e.g. Wang and Chern 2008). Such ‘reschooling’ arguments are advanced most commonly via proposals for the development of digitally aligned modes of schooling that are built around the active communal creation of knowledge (rather than passive individual consumption), and imbued with a sense of play, expression, reflection and exploration. These imperatives to change and reinvent have been expressed most fully in terms of curriculum and pedagogy, as evidenced in the variety of recent proposals from education commentators and stakeholders for ‘pedagogical mash-ups’, ‘remix curricula’ and pedagogies of social interaction (e.g. Fisher and Baird 2009, Code and Zaparyniuk 2009).

All of these curricular reconfigurations are predicated upon the notion that web 2.0 technologies are leading to different types of information and knowledge production that is based around fast-changing, non-textual forms that require new forms of more critical and reflexive information skills and literacies (Buschman 2009). In this sense the argument is increasingly being made that it no longer makes sense to retain ‘pre-digital’ models of curricular organization focused on rigidly hierarchic organisation of static content under the control of the teacher. Instead, questions are now being asked in relation to how best to develop web 2.0 inspired curricula that can be negotiated rather than prescribed, that are driven by learner needs and based on providing learners with skills in managing and accessing knowledge and being in control of their own learning pathways and choices (Facer and Green 2007). Thus growing numbers of authors are now discussing the likely nature and form of ‘curriculum 2.0’ - what Edson (2007) terms as ‘user-driven education’ allowing learners to take an active role in what they learn as well as how and when they learn it. Of course, this ‘pick and mix approach’ to curricular content and form are also seen to present a fundamental challenge to the professional roles and cultures of educators (Swain 2009). As McLoughlin and Lee (2008, p.647) conclude, all of these proposals therefore centre on the need for educators to also change their practices and expand their vision of pedagogy, “where learners are active participants or co-producers of knowledge rather than passive consumers of content and learning is seen as a participatory, social process supporting personal life goals and needs”.

All of these arguments reflect a growing belief that technology-based practices of collaboration, publication and inquiry should be foregrounded within schools' approaches to teaching and learning. The mass collaboration seen to be at the heart of web 2.0 applications has been touted by some commentators as having the potential to 'change everything' – even allowing students to rewrite and edit school textbooks (Tapscott and Williams 2008). For instance, calls continue to be made for the rebuilding of schools to fit with the needs and demands of modern technology. From continuing calls for a 'recombinant architecture' to proposals for the re-design of the school environment into 'collaboration-friendly' 'really cool spaces' (e.g. Dittoe 2006), the notion of redesigning and rebuilding the physical environment of the school continue to gain popularity. Underpinning many of these suggestions is the belief that children should be given more control of their interactions with information and knowledge. For instance, Charles Leadbeater (2008a, p.147) suggests a reorientation of the school to make learning 'a more peer-to-peer activity ... see[ing] children as part of the school's productive resources, not just as its consumers'. Similarly, Marc Prensky (2008) argues for a "new pedagogy of kids teaching themselves with the teacher's guidance". This sense of allowing young people opportunities to influence the direction of institutional change is reflected in Donald Tapscott's (1999) advice to "give students the tools, and they will be the single most important source of guidance on how to make their schools relevant and effective places to learn" (p.11). Whilst none of these authors are suggesting the complete abolishment of school, they are pointing towards a substantial alteration and refocusing of what schools are and what they do.

Towards a more reasoned response to web 2.0 and schools

At first glance, many of these responses and arguments appear perfectly well reasoned and sensible. There is an undoubted need to reconcile schooling with the challenges of digital technologies and it makes sense to sketch out ideas for how systems of schooling that have not fundamentally changed since the beginning of the twentieth century can be brought up to date with twenty-first century life. Yet whilst compelling, there are a number of inconsistencies to these current debates surrounding schools and web 2.0 that merit further scrutiny and challenging. In

particular it should be observed that current discussions of web 2.0 and schools repeat a long-standing tendency in education for exaggerated and extreme reactions to technology - reflecting an implicit 'technology-first' way of thinking where web 2.0 technologies are imbued with a range of inherent qualities that are then seen to 'impact' (for better or worse) on learners, teachers and schools in ways that are consistent regardless of circumstance or context. In this way, current debates over web 2.0 and schools are perpetuating a long lineage in educational thinking about technology based around crude but compelling 'technologically determinist' perspective that "social progress is driven by technological innovation, which in turn follows an 'inevitable' course" (Smith 1994, p.38)

One of the key weaknesses of a technologically determinist reading of schools and web 2.0 is the tendency to approach technology-based processes as a closed 'black box'. As such it is important to recognise the ideological underpinnings of the current web 2.0 drive in education. Indeed, it should be clear from the brief examples in this article, that the current discussions over web 2.0 and schools reflect a number of ongoing debates about education and society that are highly ideological in nature. As such, the forms of web 2.0 based changes being proposed from within the education technology community are not merely benign technical readjustments to schooling. Whether they realise it or not, these proposals are highly political in nature. As Henri Lefebvre observed, projecting the future of technology and society is always a profoundly political project "that presents itself as objective meaning?" (Lefebvre 1981, p.149).

For example, much of the current debates about web 2.0 and the reinvention of schools (what can be recognised as a set of arguments concerning the *re-schooling* of society), position web 2.0 technologies as a 'technical fix' for addressing wider concerns about schools and schooling. Over the last forty years at least, schools have been seen by many commentators as a cause for concern rather than celebration, with accounts persisting in many developed countries of school systems somehow 'failing' to perform as well they should. For many policymakers and other commentators, the under-performance of schools has led to what Stephen Gorard has termed a prevailing 'crisis account' of schooling where educational opportunities are seen to be increasingly polarized, and schools are characterized by poor overall educational standards. As Gorard (2001, p.279) describes:

“This crisis account is a shared perspective of a loose alliance of researchers and other commentators who apparently recall some golden age of schooling, when educational standards were generally higher, and social justice was greater. Since that time, divisions ... are supposed to have increased”.

In this sense some sections of the educational community appear to be all too keen to seize upon web 2.0 technologies as offering a ready ‘technical fix’ to the problem of the failing – or at least underperforming – school. As such, many of the arguments being advanced for web 2.0 are not driven by a deep belief about the educative power of technology, rather they are driven by a deep concern about the state of schooling in contemporary society. As such web 2.0 technologies are being used as a vehicle through which to express a long-standing tendency in western societies to view digital technology as a ‘technical fix’ for wider social problems.

The ideological underpinnings of the *replacement* arguments surrounding web 2.0 are even more diverse and hidden. In particular, proposals for the web 2.0 replacement of the school should be seen as feeding into a wider anti-schooling sentiment has long been implicit in discussion of education and technology, often based upon a range of anti-establishment ideals (see Bigum and Kenway 1998). In this sense it is evident how much of the current calls outlined above for the discontinuation of schooling in favour of technological means advocate the comprehensive ‘deschooling’ of society along digital lines - consciously updating the arguments of Ivan Illich (1971). Illich’s (1971) condemnation of institutionalized learning centred on a set of concerns that educational institutions inhibited – if not precluded - individual growth. This logic has a direct lineage with contemporary rhetoric of digital technologies and education. As Charles Leadbeater (2008a, p.44) reasoned recently, “in 1971 [deschooling] must have sounded mad. In the era of *eBay* and *MySpace* it sounds like self-evident wisdom”. Indeed, the tendency of educationalists to celebrate individuals’ self-determination of their learning via web 2.0 tools feeds into a wider enthusiasm shared amongst many in education for the inherent benefits of forms of ‘informal learning’ that take place outside the control of formal education organisations and settings (see Sefton-Green 2004). This in turn can be seen as part of a wider societal idealisation of the informal (Misztal 2000), and the networked individualism of everyday life (see Beck and Beck-Gernsheim 2002).

In one sense, these arguments stem from a continuation of the counter-cultural, Californian 'anti-establishment' ideals that have underpinned much of the development of information technology since the 1970s. As Dana Boyd (2007, p.17) points out, for many technologists the notions of 'web 2.0' and 'social software' are not used merely as neutral labels, but also as a rallying call for new age of activities which are made 'by the people, for the people' rather than centred around official, institutional interests. Yet whilst the intentions of many technologists may well be rooted in such relatively benign sensibilities, it is noticeable that the spirit of these arguments is now being used to support a removal of the state from the provision of public education by a range of more neo-conservative and neo-liberal interests (see Kovacs 2007, Apple 2004). For example, it is noticeable how new internet technologies are beginning to be enrolled into recent neo-liberal arguments for the 'end of school' and realising the 'dream of education without the state' (Tooley 2006). Here technology is valorised as an ideal vehicle for the establishment of "a genuine market in education, where there was no state intervention of any kind, in funding, provision or regulation" (Tooley 2006, p.26). For example, Tooley (2006, p.22) talks of "the technological capability to allow inspiring teachers to reach millions of young people [rather than] forc[ing] all teachers into an egalitarian straight-jacket".

From this perspective, many of the arguments for the web 2.0 replacement of schools could be said to feed into the wider libertarian discourses that have long pervaded societal and political discussion of digital technology – what writers such as Langdon Winner (1997) have termed 'cyber-libertarianism'. Here the power of technology and the power of the individual - what Kelemen and Smith (2001, p.371) term 'two ideas which lie at the heart of modern civilisation' - converge into an argument for the creation of new forms of action and organisation that do not require the appropriation of traditional space or structures. In this sense digital technology is positioned as nothing less than "a moral enterprise set to rescue the world" (Kelemen and Smith 2001, p.370), underpinned by an ideological faith in the power of radical individualism, market forces and pursuit of rational self-interest (Winner 1997). All of these sentiments seem a world away from the hopes of more social and communal forms of learning outlined at the beginning of this article.

Conclusion – Towards a more critical understanding of web 2.0 and schools

Any reader of this article should now be clear about the political nature and the political importance of schools and web 2.0 technology. Debates about schools and web 2.0 are not simply about matters of internet bandwidth or the pedagogic affordances of wikis. They are also debates about questions of benefit and power, equality and empowerment, structure and agency and social justice. From this brief discussion alone, it is clear that web 2.0 is being used as a ready site for rehearsing many of the wider debates, controversies and tensions about the future of schools and schooling in the twenty-first century. As Michael Apple (2002, p.442) also reasoned:

“the debate about the role of the new technology in society and in schools is not and must not be just about the technical correctness of what computers can and cannot do. These may be the least important kinds of questions, in fact. Instead, at the very core of the debate are the ideological and ethical issues concerning what schools should be about and whose interests they should serve”.

As with much ideologically driven debate, current thinking about web 2.0 and schools therefore contains a number of silences and gaps that require recognising and confronting – not least the portrayal of new technology as capable of enacting new arrangements and forms of education. For all its intuitive appeal, the widespread valorisation of informal learning and the technology-empowered individual learner dangerously depoliticises the act of learning (Gorman 2007), placing far too much emphasis on the disembodied individual learner. Such arguments present an overly simplistic view of successful education relying merely on groups of like-minded individuals, failing to consider the wider social, economic, political and cultural contexts of the societal act of schooling. A number of critical questions therefore remain unasked and unanswered. For example, if the state is no longer responsible for the provision of education through school systems, then who is to assume responsibility? What is the role of the private sector and corporate capitalism in the libertarian take on web 2.0 based schooling? What inequalities of access, skills, resourcing or know-how will remain, and who will be concerned with correcting them?

All of these questions and silences point to the dangers of educational

technologists using web 2.0 as a justification for giving up on the notion of the school with some form of pedagogic authority and responsibility. Instead of rejecting the entire notion of the industrial-era school as it currently exists, it may be more productive to set about addressing the 'problem' of schools and technology in subtler and less disruptive ways that work 'with' the micro-politics of the school rather than against them. As Wilhelm (2004, p.xii) puts it, "meet[ing] people where they are, not where they would like them to be?". So it makes little sense – and is of little practical help – to argue that the only way that web 2.0 technologies can be properly used in education is by radically altering the school. This leaves proponents of web 2.0 use in education having to face a different set of issues than are currently being discussed. As Julian Sefton-Green (2004, p.32) concludes:

"Nothing is going to replace the importance of schools in educating the young in our society, nor is any other system likely to be able to play a role in overcoming social inequalities, but the formal education system is both under attack and in development from a number of directions and from a number of perspectives. There seem to be two main implications for schools and curriculum here. First, teachers and other educators just simply need to know a lot more about children's experiences and be confident to interpret and use the learning that goes on outside of the classroom. Especially for teachers of young children, we need an educational culture that can draw on a wider model of learning that that allowed for at present. Secondly, we need to work within various curriculum locations to develop links with out-of-school learning experiences on offer. We have to find a way also of overcoming the fact that not all children have equal access to all experiences but acknowledge the real diversities in children's lives to support productive curriculum development".

Referencias bibliográficas

- Apple, M. (2002) 'Is the new technology part of the problem or part of the solution in education?' in Darder, A., Baltodano, M. and Torres, R. (eds) *The critical pedagogy reader* London, Routledge
- Apple, M. (2004) 'Are we wasting money on computers in schools?' *Educational Policy*, 18, 3, pp.513-522
- Beck, U. and Beck-Gernsheim, E. (2002) *'Individualization'* London, Sage
- Bigum, C. and Kenway, J. (1998) 'New information technologies and the ambiguous future of schooling: some possible scenarios' in *'International Handbook of Educational Change'* Kluwer, Springer
- Bigum, C. and Rowan, L. (2008) 'Landscaping on shifting ground: teacher education in a digitally transforming world' *Asia-Pacific Journal of Teacher Education*, 36, 3, pp.245-255
- Boyd, D. (2007) 'The significance of social software' in Burg, T. and Schmidt, J. (eds.) *'BlogTalks reloaded: social software research and cases'* Norderstedt, Books on Demand
- Brusilovsky, P. (2008) 'Social information access: the other side of the social web' *Lecture Notes in Computer Science*, no.4910, pp.5-22
- Buschman, J. (2009) 'Information literacy, 'new' literacies and literacy' *The Library Quarterly*, 79, 1, pp.95-118
- Castells, M. (2008) *'Internet beyond myths: the record of scholarly research'* presentación a London School of Economics, 24th October
- Code, J. and Zaparyniuk, N. (2009) 'The Emergence of Agency in Online Social Networks' in Hatzipanagos, S. and Warburton, S. (eds) *'Handbook of research on social software and developing community ontologies'* Hershey PA, IGI Global
- Crook, C. (2008) 'Theories of formal and informal learning in the world of web 2.0' in Livingstone, S. (ed) *'Theorising the benefits of new technology for youth'* University of Oxford/ London School of Economics
- Crook, C. and Harrison, C. (2008) *'Web 2.0 use for learning at key stage three and four: final report'* Coventry, Becta
- Dale R., Robertson S. and Shortis T. (2004) 'You can't not go with the technological flow, can you?' constructing 'ICT' and 'teaching and learning: the interaction of policy, management and technology' *Journal of Computer Assisted Learning* 20, pp.456-470.
- Davies, J. and Merchant, G. (2009) *'Web 2.0 for schools: learning and social participation'* New York, Peter Lang
- Dittoe, W. (2006) 'Seriously Cool Places: The Future of Learning-Centered Built Environments' in Oblinger, D. (ed) *' Learning Spaces'* Washington DC: EDUCAUSE.
- Edson, J. (2007) 'Curriculum 2.0: user-driven education' *The Huffington Post*, 25 Jun. [www.huffingtonpost.com/jonathan-edson/curriculum-20-userdri_b_53690.html]
- Facer, K. and Green, H. (2007) 'Curriculum 2.0 educating the digital generation' *Demos Collection*, no. 24, pp. 47-58
- Fisher, M. and Baird, D. (2009) 'Pedagogical mashup: Gen Y, social media, and digital learning styles' in Hin, L. and Subramaniam, R. (eds) *'Handbook of research on new media literacy at the K-12 level'* Hershey PA, IGI Global

- Gorard, S. (2001) 'International Comparisons of School Effectiveness: the second component of the 'crisis account' in England?' *Comparative Education* 37, 3, pp. 279–296
- Gorman, R. (2007) 'The Feminist standpoint and the trouble with 'informal learning': a way forward for Marxist-Feminist educational research' in Green, A., Rikowski, G. and Raduntz, H. [eds] *Renewing dialogues in Marxism and education* London, Palgrave Macmillan
- Grant, L. (2009) 'HEATHER I DON'T CARE DO UR OWN PAGE! A case study of using wikis for collaborative inquiry in school' *Learning, Media and Technology*, 34, 2, pp.105-117
- Hargadon, S. (2008) 'Web 2.0 is the future of learning' March 4th [www.stevehargadon.com/2008/03/web-20-is-future-of-education.html]
- Illich, I. (1971) *Deschooling Society* Harmondsworth, Penguin Books.
- Jenkins, H. (2004) 'Why Heather can write' *Technology Review* [BizTech], February 6th, [www.technologyreview.com]
- Johnson, N. (2009) 'Teenage technological experts' views of schooling' *Australian Educational Researcher*, 36,1, pp.59-72
- Kelemen, M. and Smith, W. (2001) 'Community and its 'virtual' promises: a critique of cyberlibertarian rhetoric' *Information, Communication & Society* 4, 3, pp.370-88
- Knobel, M. and Lankshear, C. (2006) 'Weblog worlds and constructions of effective and powerful writing: cross with care and only where signs permit' in K. Pahl and J. Roswell (eds) *Travel notes from the new literacy studies: instances of practice* Cleveland, Multilingual Matters
- Kovacs, P. (2007) 'The anti-school movement' in Gabbard, D. (ed) *Knowledge and power in the global economy: the effects of school reform in a neoliberal/neoconservative age* London, Routledge
- Lameras, P., Paraskakis, I. and Levy, P. (2009) 'Using social software for teaching and learning in higher education' in Hatzipanagos, S. and Warburton, S. (eds) *Handbook of research on social software and developing community ontologies* Hershey PA, IGI Publishing
- Leadbeater, C. (2008a) *We-Think* London, Profile
- Leadbeater, C. (2008b) 'People power transforms the web in next online revolution' *The Observer*, March 9th, p.26
- Lefebvre, H. (1981/ 2007) *Critique of everyday life: Volume three - from modernity to modernism* London, Verso [trans. Elliott, G.]
- Luckin, R., Clark, W., Logan, K., Graber, R., Oliver, M. and Mee, A. (2009b) 'Do web 2.0 tools really open the door to learning: practices, perceptions and profiles of 11-16 year olds learners' *Learning, Media and Technology* 34, 2, pp.87-114
- Luke, C. (2003) 'Pedagogy, connectivity, multimodality, and interdisciplinarity' *Reading Research Quarterly*, 38, 3, pp.397-413
- Lund, A. and Smørdal, O. (2006) 'Is there a space for the teacher in a wiki?' in *Proceedings of the 2006 international symposium on Wikis* Odense, Denmark, pp.37 - 46
- Mason, R. and Rennie, F. (2007) 'Using web 2.0 for learning in the community' *Internet and Higher Education*, 10, pp.196-203
- McLoughlin, C. & Lee, M. J. W. (2008). Mapping the digital terrain: new media and social

- software as catalysts for pedagogical change. In *Hello! Where are you in the landscape of educational technology? Proceedings ascilite Melbourne 2008* [www.ascilite.org.au/conferences/melbourne08/procs/mcloughlin.html]
- Negroponte, N. (1995) *Being digital* London, Coronet
- O'Reilly, T. (2005) *What Is web 2.0? Design patterns and business models for the next generation of software* [www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html]
- Orton-Johnson, K. (2007) 'The online student: lurking, chatting, flaming and joking' *Sociological Research Online*, 12, 6, [www.socresonline.org.uk/12/6/3.html]
- Prensky, M. (2008) 'The role of technology in teaching and the classroom' *Educational Technology*, 48, 6, November/December
- Sefton-Green, J. (2004) *Literature review in informal learning with technology outside school* Bristol, Futurelab
- Shaffer, D. (2008) 'Education in the digital age' *The Nordic Journal of Digital Literacy*, 4, 1, p.39-51
- Shirky, C. (2008) *Here comes everybody: the power of organizing without organizations* London, Allen Lane
- Smith, M. (1994) 'Recourse of empire' in Smith, M. and Marx, L. [eds.] *Does technology drive history? The dilemma of technological determinism* Cambridge MIT Press
- Solomon, G. and Schrum, L. (2007) *Web 2.0: new tools, new schools* Washington DC, International Society for Technology in Education.
- Somekh, B. (2007) 'How education systems are emasculating technology' paper presented to *CAL 07 Conference*, March, Dublin
- Swain, H. (2009) 'Dawn of the cyberstudent' *The Guardian*, 20th January, 'University challenge' supplement, p.1
- Tapscott, D. (1999) 'Educating the net generation' *Educational Leadership*, 56, 5, pp.6-11.
- Tapscott, D. and Williams, A. (2008) *Wikinomics: how mass collaboration changes everything* Atlantic
- Tooley, J. (2006) 'Education reclaimed' [second edition] in Booth, P. (ed) *Towards a liberal utopia?* London, Continuum
- Wang, S. and Chern, J. (2008) 'The new era of 'school 2.0' - teaching with pleasure, not pressure' in *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications* Chesapeake VA, Association for the Advancement of Computing in Education
- Wilhelm, A. (2004) *Digital nation: toward an inclusive information society* Cambridge MA, MIT Press
- Winner, L. (1997) 'Cyberlibertarian myths and the prospects for community' *Computers and Society*, 27, 3, pp.14-19

